Table 10: HSM Calibration Factors Calculated

Sample Type (Sample Size)	Roadway Type	Calibration Factor	Reported Collisions (Collisions per Year)	Predicted Collisions (Collisions per Year)
All Segments (51)	Curve	2.82*	35.4	12.5
	Tangent	1.12	49.4	44.0
	Composite	1.50*	84.8	56.6
Random Selection (25)	Curve	1.33	8.8	6.6
	Tangent	1.00	20.4	20.4
	Composite	1.08	29.2	27.0
Non-random Selection (26)	Curve	4.49*	26.6	5.9
	Tangent	1.23	29.0	23.6
	Composite	1.88*	55.6	29.5

* Denotes a statistical difference from a calibration factor of 1.

Annual variations could exist when computing calibration factors. Table 11 shows five years of calibration factors from the same data set presented in Table 10. The calibration factor chosen in Table 11 for each year used only one year of data, so the samples of collisions were small. This table can provide users with an estimate of how much variation could exist when calculating annual calibration factors. The curve segments have the highest standard deviation for each sample type, while the tangent and composite sections have lower standard deviations. Overall, the randomly selected sites have the lowest standard deviation of the calibration factors.

Table 11: Annual Calibration Factors

Sample Type (Sample Size)	Roadway Type	2004 Calibration Factor	2005 Calibration Factor	2006 Calibration Factor	2007 Calibration Factor	2008 Calibration Factor	Standard Deviation
All Segments (51)	Curve	2.63	2.07	3.19	3.75	2.47	0.65
	Tangent	1.04	1.14	1.11	1.32	1.00	0.12
	Composite	1.40	1.34	1.57	1.86	1.33	0.22
Random Selection (25)	Curve	1.36	1.51	1.97	1.06	0.76	0.46
	Tangent	0.88	0.98	0.78	1.13	1.22	0.18
	Composite	1.00	1.11	1.07	1.11	1.11	0.05
Non-random Selection (26)	Curve	4.05	2.70	4.56	6.75	4.39	1.46
	Tangent	1.19	1.27	1.40	1.48	0.80	0.26
	Composite	1.76	1.56	2.03	2.54	1.52	0.42

Field investigations of the sites took approximately 30 minutes to complete (not including driving time to the site) the collection of necessary elements for HSM analysis. However, most of these elements do not change much or at all over time, so intensive data collection for HSM inputs can be used for many years. The effort required to obtain collision data varies depending on the way the data is stored and how efficiently it can be retrieved. The HSM analysis of the field data collection for predicted collisions and reported collisions allows for the determination of the calibration factors.